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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,494	10/23/2006	Frank Dietsche	12810-00237-US1	1545
23416 7590 01/31/2011 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899				
EXAMINER				
JACKSON, MONIQUE R				
ART UNIT		PAPER NUMBER		
1787				
MAIL DATE		DELIVERY MODE		
01/31/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/595,494

Applicant(s)

DIETSCHE ET AL.

Examiner

Monique R. Jackson

Art Unit

1787

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10-17 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-17 and 25-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-945)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed 11/23/10 has been entered. New claims 25-27 have been added. Claims 1-7, 10-17 and 25-27 are pending in the application. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

2. Claims 1-7, 10-17 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tada et al (USPN 6,514,357) in view of Martorano et al for the reasons recited in the prior office action and restated below, wherein the Examiner further notes that Tada et al teaches example resins wherein the water-soluble resin is a copolymer formed from (meth)acrylic acid within the claimed range and a second acid monomer having a content within the claimed 5-40wt%, namely acrylic acid/maleic acid 90/10, acrylic acid/itaconic acid 70/30, methacrylic acid/itaconic acid 60/40, reading upon the added limitation of 5 to 40% by weight of the comonomer. Additionally, the Examiner notes that one having ordinary skill in the art at the time of the invention would have been motivated to utilize the (meth)acrylic acid monomer in an amount as taught by Tada et al, specifically at least 40wt%, or in amounts similar to those utilized in the examples taught by Tada et al, with the other comonomers taught by Tada et al which read upon or render obvious the claimed comonomers including those of new Claims 25-27, utilizing routine experimentation to determine the optimum content of each comonomer to provide the desired water solubility and copolymer properties for a particular end use wherein the Examiner notes that the presence of the acid groups on the copolymer would directly affect the pH of the composition by their very nature, and hence the pH of the composition is "controlled" by the acid copolymer as well as the additional acid incorporated by Tada et al,

wherein the instant invention also incorporates additional acid as recited in instant claim 3 would by their nature would also affect the pH of the formulation.

3. Tada et al also teach that the acid contained in the composition functions to maintain the composition in an acidic state with a pH of preferably 1.0 to 3.0 (Col. 6, lines 14-18.) Tada et al further teach that resulting organic resin layer exhibits conductivity and is dense thereby contributing to improvements with respect to corrosion resistance over a conventional organic resin layer due to the increased density of the layer, and that when the content of acid is increased, the number of crosslink points is increased, improving the film density and hence corrosion resistance (Col. 4, lines 22-34; Col. 5, lines 21-29; Col. 7, lines 17-30.) Hence, though Tada et al refer to pseudo-crosslinking taking place within the composition at various pH values, one having ordinary skill in the art at the time of the invention would have been motivated to utilize a multi-functional epoxy compound as the "coupling agent" or "crosslinker" which would form permanent crosslinks in the coating, further increasing the density of the coating.

4. As discussed in the prior office action, Tada et al teach a chromium-free, corrosion resistant composition for metal surface treatment and surface treated metallic material wherein the composition comprises an aluminum ion, a magnesium ion, a manganese ion, a water-soluble organic resin, an acid, water, and optionally a coupling agent having at least one reactive group such as an epoxy group (Abstract; Col. 3, lines 58-60.) Tada et al teach that the water-soluble organic resin is preferably a polymer or copolymers comprising at least 40% by weight or more of carboxylic monomers such as (meth)acrylic acid, cronic acid, maleic acid, itaconic acid, with acrylic acid and methacrylic acid being preferable; with example water-soluble copolymers comprising acrylic acid and another acid monomer other than the acrylic acid (Col. 4, line 34 -

Col. 5, line 14; Examples.) Tada et al teach that the acid is preferably phosphoric acid, acetic acid, nitric acid or hydrofluoric acid (Col. 3, lines 44-49.) Tada et al teach that the metal substrate is preferably a zinc-type plated steel sheet such as electrolytic or hot-dip galvanized steel (Col. 3, lines 60-64; Col. 7, lines 58-Col. 8, line 4.) Tada et al teach that the coating can be applied by roll coating, spray coating, brush coating, dip coating, or curtain flow coating, and then heated and dried to cure the coating to form a film having a thickness of 0.1 to 2.0 microns (Col. 8, lines 5-20.) Tada et al teach that the corrosion resistance of the coating is improved by increased pseudo-crosslinking and also teach that the coating can comprising a coupling agent having at least one functional group such as an epoxy group, hence providing a suggestion to utilize a coupling agent with two or more reactive functional or epoxy groups, but do not specifically teach the instantly claimed epoxy crosslinking agent. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize a coupling or crosslinking agent having more than one epoxy group, or known epoxy crosslinking agents or known functionally equivalent crosslinking agents in the art wherein the claimed crosslinking agents are known water-soluble crosslinking agents utilized in similar metal coating compositions as taught by Martorano et al, including the oxirane and azirane crosslinking agents as claimed, and hence would have been obvious to one having ordinary skill in the art at the time of the invention given the predictable results and reasonable expectation of success, wherein one skilled in the art would have been motivated to utilize routine experimentation to determine the amount or ratio of crosslinking agent to acid copolymer to provide the desired crosslinking properties for a particular end use of the coated steel substrate, wherein it is well established in the coating art that crosslink density is a result-effective variable affecting the mechanical and

physical properties of the coating layer including density, hardness and flexibility. With respect to the contact time as recited in Claim 17, one having ordinary skill in the art at the time of the invention would have been motivated to determine the optimum contact time to provide a coating having the desired thickness for a particular end use wherein given that Tada et al teach a coating thickness as claimed, the claimed contact times would have been obvious.

Response to Arguments

5. Applicant's arguments filed 11/23/10 have been fully considered but they are not persuasive given the additional remarks incorporated into the rejection recited above and the following comments. With respect to Applicant's arguments that the pH of the formulation is controlled by the nature and concentration of the acid groups on the copolymer, the Examiner notes that the copolymer taught by Tada et al which also comprises (meth)acrylic acid groups as well as other acid groups that read upon the claimed acidic comonomers would also by its very nature have a direct effect on the pH of the formulation and hence the pH of the formulation is "controlled by the nature and concentration" of the acid comonomers. The Examiner further notes that though the composition taught by Tada et al further includes an acid which Tada et al teaches functions to maintain the pH within a particular range, the instant composition does not exclude the incorporation of an acid and in fact, the instant invention specifically recites that an acid is further incorporated into the composition in the dependent claims, which by its very nature would affect the pH of the composition. In terms of Claims 25-27, Tada et al provides a teaching of utilizing additional comonomers including maleic acid, wherein the Examiner takes the position that the anhydride thereof would have been obvious to one having ordinary skill in the art at the time of the invention, as well as vinyl comonomers particularly vinyl compounds

containing a sulfonic acid or phosphate group thereby rendering the claimed vinyl phosphonic acid obvious as well as reading upon a monomer containing OH-groups as claimed. With regards to Applicant's arguments over Martorano, the Examiner notes that Martorano was not cited to teach an acid mixture but was cited to support the Examiner's position that the oxirane and azirane crosslinking agents as claimed are known water-soluble crosslinking agents utilized in similar metal coating compositions and one having ordinary skill in the art at the time of the invention would have been motivated to utilize these known crosslinking agents given the predictable results and reasonable expectation of success. Therefore, the Examiner maintains her position that the claimed invention would have been obvious over the teachings of Tada et al in view of Martorano for the reasons discussed above.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 10:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Monique R Jackson/
Primary Examiner, Art Unit 1787
January 30, 2011